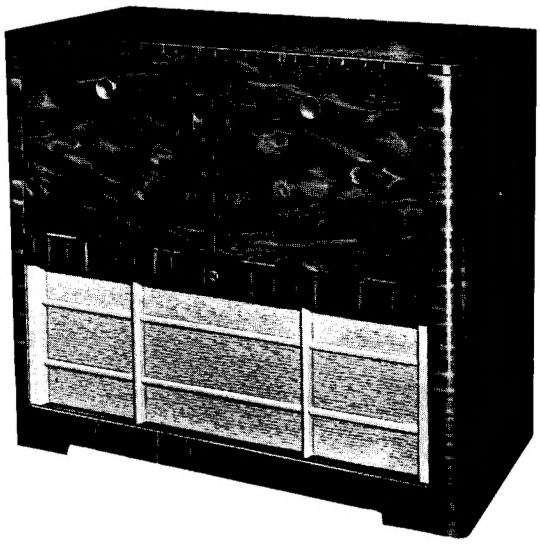
TECHNICAL INFORMATION AND SERVICE DATA

A.W.A. RADIOLAGRAMS
Models 554-GA and 560-GA

FIVE VALVE, TWO BAND,
A.C. OPERATED SUPERHETERODYNES

ISSUED BY:
AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



ELECTRICAL SPECIFICATIONS

Frequency Ranges:

Medium Wave	540-1600 Kc/s (555-187.5 Metres)
Short Wave	6-18 Mc/s (50-16 Metres)
Intermediate Frequency	455 Kc/s

Power Supply Rating ..... 200-260 Volts 50-60 C.P.S.
(Models are produced with other voltage and frequency ratings.)

Power Consumption:
Receiver — 40 watts
Record Changer — 17 watts

Dial Lamps:
6.3 volts, 0.25 Amp. M.E.S.

Valve Complement:

(1)	6BE6	Converter
(2)	6BA6	I.F. Amplifier
(3)	6AV6	Detector, A.F. Amplifier, A.V.C.
(4)	6BV7	Output
(5)	6X4	Rectifier

Loudspeaker:
12 inch permanent magnet AU78
Transformer XA302
V.C. Impedance 3 ohms at 400 C.P.S.
Undistorted Power Output ..... 2.5 watts

Chassis Removal.

First remove the knobs by pulling them straight off their spindles.

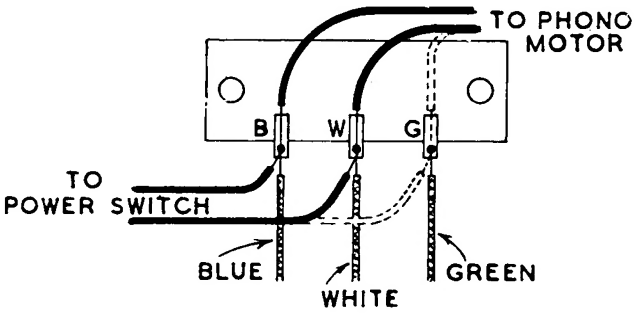
Remove the cabinet back which is held by wood screws.

Disconnect the loudspeaker cable, pick-up cable and phono-motor plug from the sockets on the rear of the chassis.

The chassis is held to the receiver compartment base board by four screws. Removal of these enables the receiver to be withdrawn.

To remove the record changer first remove two clamps securing the pick-up and phono-motor cables.

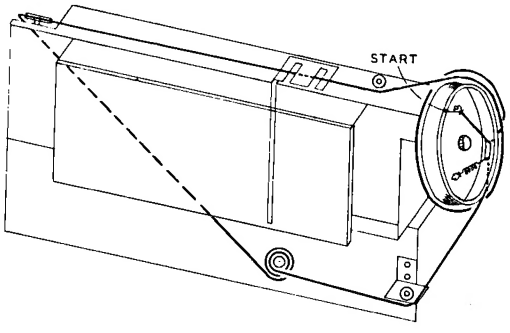
Then remove the three mounting screws holding the record changer to the base board and the changer will be free to lift out.



Connection to Power Supply.

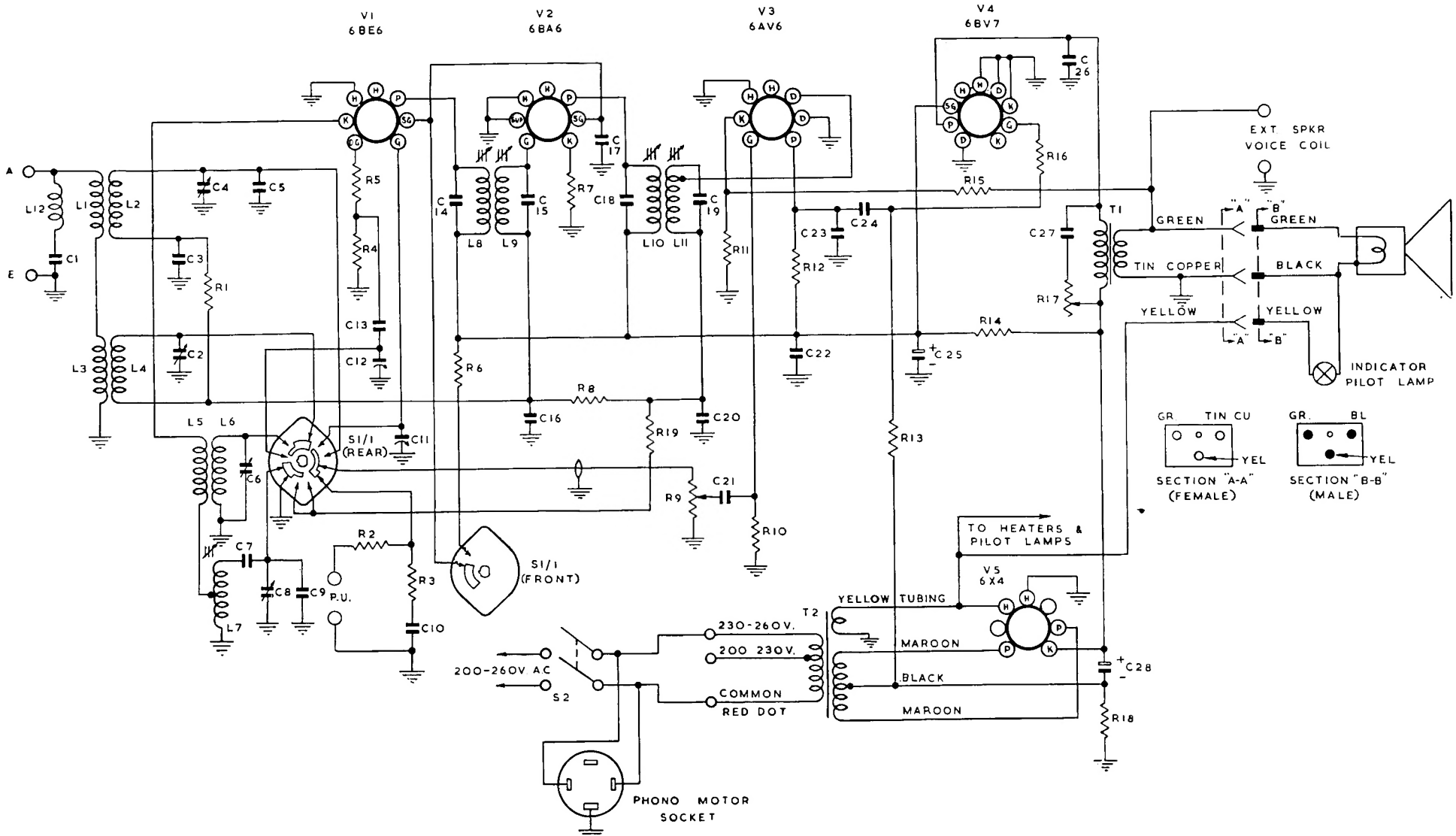
The receiver should not be connected to any circuit supplying other than alternating current from 200-260 volts and at the frequency on the label within the cabinet.

The power supply connections are shown in the accompanying diagram.



Drive Cord Replacement.

The accompanying diagram shows the route of the cord and the method of attachment.


V1
6BE6
V2
6BA6
V3
6AV6
V4
6BV7
V5
6X4
A
E
L12
L1
L2
L3
L4
L5
L6
L7
L8
L9
L10
L11
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
C26
C27
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
T1
T2
S1/1 (REAR)
S1/1 (FRONT)
P.U.
S2
200-260V AC
230-260V.
200 230V.
COMMON
RED DOT
YELLOW TUBING
MAROON
BLACK
MAROON
TO HEATERS & PILOT LAMPS
PHONO MOTOR SOCKET
EXT SPKR VOICE COIL
GREEN
TIN COPPER
YELLOW
GREEN
BLACK
YELLOW
INDICATOR PILOT LAMP
GR TIN CU
YEL
SECTION "A-A" (FEMALE)
GR. BL
YEL
SECTION "B-B" (MALE)

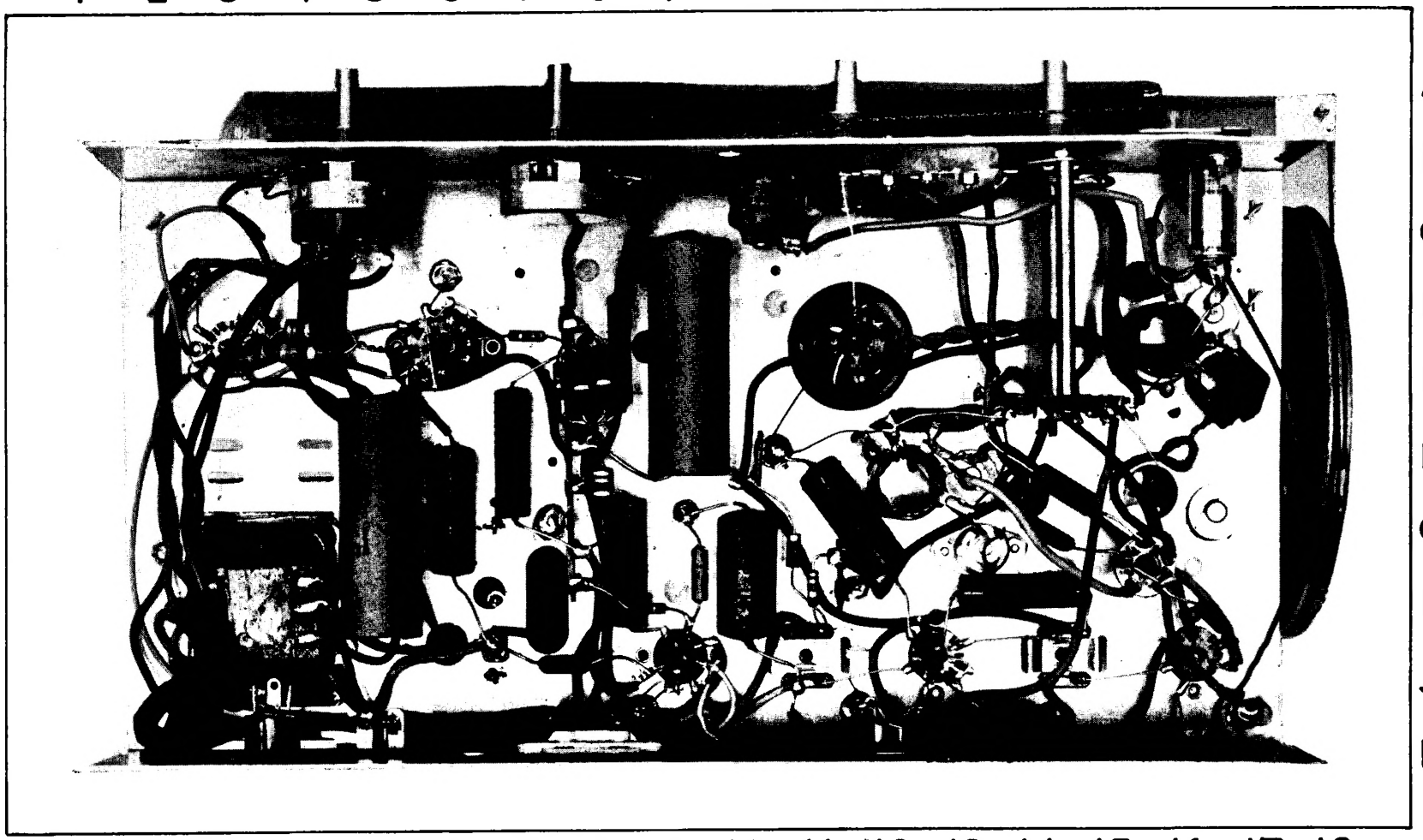


FIG. 2.

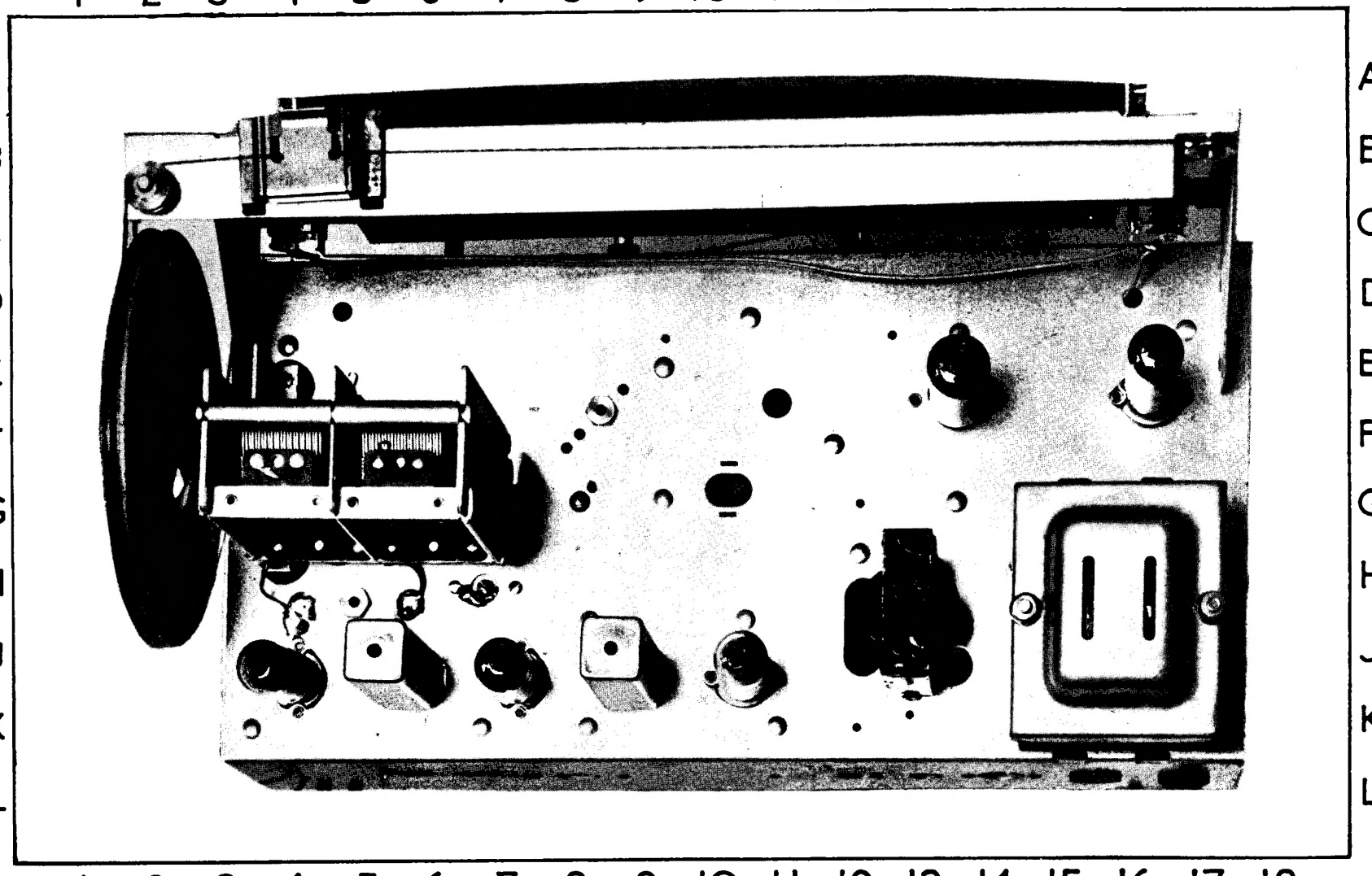


FIG.1.

ALIGNMENT PROCEDURE

Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent as the unit is accurately aligned during manufacture and cannot be readjusted unless by skilled operators using special equipment.

For all alignment operations, connect the "low" side of the signal generator to the receiver chassis and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

Testing Instruments.

(1) A.W.A. Junior Signal Generator, type 2R7003.

or

(2) A.W.A. Modulated Oscillator, series J6726.

If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals, and for short wave alignment, an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.

(3) A.W.A. Output Meter, type 2M8832.

NOTE.—On the short wave band the oscillator is working on the low side of the signal frequency; therefore, the image will now be heard if the receiver is tuned to a higher frequency than the signal. For example, if the receiver is tuned to receive a 16 Mc/s signal, the image will be heard at 16.91 Mc/s instead of the usual 15.09 Mc/s.

ALIGNMENT TABLE

Order	Connect "High" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for Maximum Peak Output:
1	Aerial Section of Gang (Drive End)	455 Kc/s	540 Kc/s (4QL)	L11 Core
2	Aerial Section of Gang (Drive End)	455 Kc/s	540 Kc/s (4QL)	L10 Core
3	Aerial Section of Gang (Drive End)	455 Kc/s	540 Kc/s (4QL)	L9 Core
4	Aerial Section of Gang (Drive End)	455 Kc/s	540 Kc/s (4QL)	L8 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Lead	600 Kc/s	600 Kc/s (7ZL)	L.F. Osc. Core Adj. (L7)*
6	Aerial Lead	1500 Kc/s	1500 Kc/s (3AK)	H.F. Osc. Adj. (C8)
7	Aerial Lead	1500 Kc/s	1500 Kc/s (3AK)	H.F. Aer. Adj. (C2)
Repeat adjustments 5, 6 and 7.				
8	Aerial Lead	16 Mc/s	16 Mc/s	H.F. Osc. Adj. (C6)†
9	Aerial Lead	16 Mc/s	16 Mc/s	H.F. Aer. Adj. (C4)

* Rock the tuning control back and forth through the signal.

† Use maximum capacity peak if two can be obtained. Check to determine the trimmer has been adjusted to correct peak by tuning the receiver to approximately 16.91 where a weaker signal should be obtained.

REPLACEMENT PARTS

Cabinet, Model 554-GA	28115
Model 560-GA	28117
Dial Scale	32216
Knob Assembly	26516
Knob Assembly, Phono/Radio	26519
Pointer	33093
Speed Nut, Phono Motor Socket	21915
Socket, 4 pin Phono Motor	28313
2 pin Pick-Up	(Code No. 793038)
3 pin Speaker	31825
7 pin Valve	19965
9 pin Valve	(Code No. 793037)
Spring, drive	1741

D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance in ohms
Aerial Coil (M.W.):	
Primary (L3)	13
Secondary (L4)	1.5
Aerial Coil (S.W.):	
Primary (L1)	2.5
Secondary (L2)	†
Oscillator Coil (M.W.) (L7)	3.5
Oscillator Coil (S.W.):	
Primary (L5)	†
Secondary (L6)	†
I.F. Transformer Windings	17
Power Transformer (T2):	
Primary	50
Secondary	350
Loudspeaker Input Transformer (T1):	
Primary	350
Secondary	†

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations and it should not be assumed that a component is faulty if a slightly different reading is obtained.

† Less than 1 ohm.

SOCKET VOLTAGES

	VALVES	Cathode to Chassis Volts:	Screen Grid to Chassis Volts:	Anode to Chassis Volts:	Anode Current mA:	Heater Volts:
6BE6	Converter	—	95	200	2	6.3
6BA6	I.F. Amp.	2.3	95	200	4.5	6.3
6AV6	Det., A.F. Amp., A.V.C.	—	—	140*	1.3	6.3
6BV7	Output	—	200	240	24	6.3
6X4	Rectifier	250	—	230/230 A.C. R.M.S.	—	6.3

Total H.T. Current = 42 mA.

Measured at 240 volts A.C. supply. No signal input. Volume Control maximum clockwise. Voltmeter 1,000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

* This reading may vary depending on the voltmeter used.

CIRCUIT CODE — RADIOLA 554-GA, 560-GA

Code No.	Description	Part No.	Fig. No.	Location
	INDUCTORS			
L1, L2	Aerial Coil 6-18 Mc/s.	28228	2	D16
L3, L4	Aerial Coil 540-1,600 Kc/s.	30768	2	E11
L5, L6	Oscillator Coil 6-18 Mc/s.	28229	2	F12
L7	Oscillator Coil 540-1,600 Kc/s.	32406	2	G16
L8, L9	1st I.F. Transformer	27351	1	J5
L10, L11	2nd I.F. Transformer	27353	1	J9
L12	I.F. Filter (including C1)	9382	2	C10
	RESISTORS			
R1	0.1 megohm ½ watt		2	E12
R2	0.47 megohms ½ „		2	K13
R3	0.39 megohms ½ „		2	J14
R4	22,000 ohms ½ „		2	H16
R5	100 ohms ½ „		2	H16
R6	11,000 ohms 2 „		2	E8
R7	330 ohms ½ „		2	J13
R8	2.2 megohms ½ „		2	G11
R9	0.5 megohm Volume Control	26442	2	B7
R10	10.0 megohms ½ watt		2	J9
R11	30 ohms ½ „		2	H9
R12	47,000 ohms 1 „		2	G8
R13	0.22 megohm ½ „		2	E7
R14	2,350 ohms 2 „		2	D4
R15	1,000 ohms ½ „		2	H9
R16	4,700 ohms ½ „		2	D7
R17	0.1 megohm Tone Control (incl. S2)	26441	2	B5
R18	100 ohms 1 watt		2	D8
R19	47,000 ohms ½ „		2	H11
	CAPACITORS			
C1	47 $\mu\mu$F silvered mica		2	C11
C2	3-25 $\mu\mu$F trimmer	27526	2	B12
C3	4,000 $\mu\mu$F padder ± 2½%		2	E17
C4	2-20 $\mu\mu$F air trimmer	19659	2	C16
C5	9 $\mu\mu$F mica		2	D15
C6	2-20 $\mu\mu$F air trimmer	19659	2	G13
C7	440 $\mu\mu$F padder ± 2½%		2	F14
C8	3-25 $\mu\mu$F trimmer	27526	2	B13
C9	9 $\mu\mu$F mica		2	F13
C10	1,000 $\mu\mu$F mica		2	K13
C11	12-445 $\mu\mu$F tuning	18222	1	F4
C12	12-445 $\mu\mu$F tuning	18222	1	F6
C13	47 $\mu\mu$F silvered mica		2	G14
C14	100 $\mu\mu$F silvered mica (in 1st I.F.)		2	J14
C15	100 $\mu\mu$F silvered mica (in 1st I.F.)		2	J14
C16	0.05 μF paper 200V working		2	H14
C17	0.05 μF paper 400V working		2	G12
C18	100 $\mu\mu$F silvered mica (in 2nd I.F.)		2	J11
C19	100 $\mu\mu$F silvered mica (in 2nd I.F.)		2	J11
C20	220 $\mu\mu$F ceramic		2	J12
C21	0.01 μF paper 600V working		2	G8
C22	0.1 μF paper 400V working		2	H10
C23	100 $\mu\mu$F mica		2	J8
C24	0.025 μF paper 400V working		2	F7
C25	24 μF 350 P.V. Electrolytic		2	E9
C26	0.005 μF paper 600V working		2	G6
C27	0.05 μF paper 400V working		2	D4
C28	24 μF 350 P.V. Electrolytic		2	G5
	TRANSFORMERS			
T1	Loudspeaker Transformer	XA302	1	J13
T2	Power Transformer, 50-60 C.P.S.	25807C	1	J16
	40 C.P.S.	25809C		
	SWITCHES			
S1	Phono-Radio Switch	33092	2	E14
S2	Power Switch (on R17)		2	C4
	LOUDSPEAKER			
	12 inch Permanent Magnet	20755		